SEQUENCE LISTING

<110> EISENBACH-SCHWARTZ, Michal
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       BESERMAN, Pierre
       MOSCHEGO, Alon
       MUALEM, Gila

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<151> 1999-05-19

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17

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19

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<213>   Homo sapiens

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His Arg Asp Thr Gly Ile Leu Asp Ser Ile Gly Arg Phe Phe Gly Gly
        35   40   45

Asp Arg Gly Ala Pro Lys Arg Gly Ser Gly Lys Asp Ser His His Pro
    50   55   60

Ala Arg Thr Ala His Tyr Gly Ser Leu Pro Gln Lys Ser His Gly Arg
65   70   75   80

Thr Gln Asp Glu Asn Pro Val Val His Phe Phe Lys Asn Ile Val Thr
                85   90   95

Pro Arg Thr Pro Pro Pro Ser Gln Gly Lys Gly Arg Gly Leu Ser Leu
            100   105   110

Ser Arg Phe Ser Trp Gly Ala Glu Gly Gln Arg Pro Gly Phe Gly Tyr
    115   120   125

Gly Gly Arg Ala Ser Asp Tyr Lys Ser Ala His Lys Gly Phe Lys Gly
    130   135   140

Val Asp Ala Gln Gly Thr Leu Ser Lys Ile Phe Lys Leu Gly Gly Arg
145   150   155   160

Asp Ser Arg Ser Gly Ser Pro Met Ala Arg Arg
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<212> PRT
<213> Homo sapiens

<400> 13

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Ala Ser Leu Val Ala Thr Gly Leu Cys Phe Phe Gly Val Ala Leu Phe
             20   25   30

Cys Gly Cys Gly His Glu Ala Leu Thr Gly Thr Glu Lys Leu Ile Glu
          35   40   45

Thr Tyr Phe Ser Lys Asn Tyr Gln Asp Tyr Glu Tyr Leu Ile Asn Val
      50   55   60

Ile His Ala Phe Gln Tyr Val Ile Tyr Gly Thr Ala Ser Phe Phe Phe
65   70   75   80

Leu Tyr Gly Ala Leu Leu Leu Ala Glu Gly Phe Tyr Thr Thr Gly Ala
          85   90   95

Val Arg Gln Ile Phe Gly Asp Tyr Lys Thr Thr Ile Cys Gly Lys Gly
          100   105   110

Leu Ser Ala Thr Val Thr Gly Gly Gln Lys Gly Arg Gly Ser Arg Gly
          115   120   125

Gln His Gln Ala His Ser Leu Glu Arg Val Cys His Cys Leu Gly Lys
          130   135   140

Trp Leu Gly His Pro Asp Lys Ile Thr Tyr Ala Leu Thr Val Val Trp
145   150   155   160

Leu Leu Val Phe Ala Cys Ser Ala Val Pro Val Tyr Ile Tyr Phe Asn
                165   170   175

Thr Trp Thr Thr Cys Gln Ser Ile Ala Phe Pro Ser Lys Thr Ser Ala
            180   185   190

Ser Ile Gly Ser Leu Cys Ala Asp Ala Arg Met Tyr Gly Val Leu Pro
            195   200   205

Trp Asn Ala Phe Pro Gly Lys Val Cys Gly Ser Asn Leu Leu Ser Ile
    210   215   220

Cys Lys Thr Ala Glu Phe Gln Met Thr Phe His Leu Phe Ile Ala Ala
225   230   235   240

Phe Val Gly Ala Ala Ala Thr Leu Val Ser Leu Leu Thr Phe Met Ile
                245   250   255

Ala Ala Thr Tyr Asn Phe Ala Val Leu Lys Leu Met Gly Arg Gly Thr
            260   265   270

Lys Phe

<210>   14
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<212>   PRT
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<400>   14

Met Ala Ser Leu Ser Arg Pro Ser Leu Pro Ser Cys Leu Cys Ser Phe
1   5   10   15

Leu Leu Leu Leu Leu Leu Gln Val Ser Ser Ser Tyr Ala Gly Gln Phe
                20   25   30

Arg Val Ile Gly Pro Arg His Pro Ile Arg Ala Leu Val Gly Asp Glu
            35   40   45

Val Glu Leu Pro Cys Arg Ile Ser Pro Gly Lys Asn Ala Thr Gly Met
    50   55   60

22

Glu Val Gly Trp Tyr Arg Pro Pro Phe Ser Arg Val Val His Leu Tyr
65   70   75   80

Arg Asn Gly Lys Asp Gln Asp Gly Asp Gln Ala Pro Glu Tyr Arg Gly
                  85   90   95

Arg Thr Glu Leu Leu Lys Asp Ala Ile Gly Glu Gly Lys Val Thr Leu
                  100   105   110

Arg Ile Arg Asn Val Arg Phe Ser Asp Glu Gly Gly Phe Thr Cys Phe
                  115   120   125

Phe Arg Asp His Ser Tyr Gln Glu Glu Ala Ala Met Glu Leu Lys Val
        130   135   140

Glu Asp Pro Phe Tyr Trp Val Ser Pro Gly Val Leu Val Leu Leu Ala
145   150   155   160

Val Leu Pro Val Leu Leu Leu Gln Ile Thr Leu Gly Leu Val Phe Leu
                  165   170   175

Lys Leu Gln Tyr Arg Leu Arg Gly Lys Leu Arg Ala Glu Ile Glu Asn
                  180   185   190

Leu His Arg Thr Phe Asp Pro His Phe Leu Arg Val Pro Cys Trp Lys
        195   200   205

Ile Thr Leu Phe Val Ile Val Pro Val Leu Gly Pro Leu Val Ala Leu
        210   215   220

Ile Ile Cys Tyr Asn Trp Leu His Arg Arg Leu Ala Gly Gln Phe Leu
225   230   235   240

Glu Glu Leu Arg Asn Pro Phe
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<400> 15

Ala Pro Lys Arg Gly Ser Gly Lys Asp Ser His Thr Arg Thr Thr His

Tyr Gly

<210> 16
<211> 23
<212> PRT
<213> Homo sapiens

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Leu Thr Pro Ala Asn Glu Asp
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cggctcggct cggcacgact cggcctgcct ggcccctgcc agtcttgccc aaccccaca   180

accgcccgcg actctgagga gaagcggccc tgcggcggct gtagctgcag catcgtcggc   240

gaccgccag cc atg gaa gac ata gac cag tcg tcg ctg gtc tcc tcg tcc   291
              Met Glu Asp Ile Asp Gln Ser Ser Leu Val Ser Ser Ser
              1   5   10

acg gac agc ccg ccc cgg cct ccg ccc gcc ttc aag tac cag ttc gtg   339
Thr Asp Ser Pro Pro Arg Pro Pro Pro Ala Phe Lys Tyr Gln Phe Val
    15   20   25

acg gag ccc gag gac gag gag gac gag gag gag gag gag gac gag gag   387
Thr Glu Pro Glu Asp Glu Glu Asp Glu Glu Glu Glu Glu Asp Glu Glu
30   35   40   45

gag gac gac gag gac cta gag gaa ctg gag gtg ctg gag agg aag ccc   435
Glu Asp Asp Glu Asp Leu Glu Glu Leu Glu Val Leu Glu Arg Lys Pro
            50   55   60

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gca gcc ggg ctg tcc gca gct gcg gtg ccg ccc gtt ttt gac gca ccg     483
Ala Ala Gly Leu Ser Ala Ala Ala Val Pro Pro Ala Ala Ala Ala Pro
            65                70                75

ctg ctg gac ttc agc agc gac tcg gtg ccc ccc gcg ccc cgc ggg ccg     531
Leu Leu Asp Phe Ser Ser Asp Ser Val Pro Pro Ala Pro Arg Gly Pro
            80                85                90

ctg ccg gcc gcg ccc cct gcc gct cct gag agg cag cca tcc tgg gaa     579
Leu Pro Ala Ala Pro Pro Ala Ala Pro Glu Arg Gln Pro Ser Trp Glu
            95               100               105

cgc agc ccc gcg gcg ccc gcg cca tcc ctg ccg ccc gct gcc gca gtc     627
Arg Ser Pro Ala Ala Pro Ala Pro Ser Leu Pro Pro Ala Ala Ala Val
110              115               120               125

ctg ccc tcc aag ctc cca gag gac gac gag cct ccg gcg agg ccc ccg     675
Leu Pro Ser Lys Leu Pro Glu Asp Asp Glu Pro Pro Ala Arg Pro Pro
                130               135               140

cct ccg ccg cca gcc ggc gcg agc ccc ctg gcg gag ccc gcc gcg ccc     723
Pro Pro Pro Pro Ala Gly Ala Ser Pro Leu Ala Glu Pro Ala Ala Pro
                145               150               155

cct tcc acg ccg gcc gcg ccc aag cgc agg ggc tcc ggc tca gtg gat     771
Pro Ser Thr Pro Ala Ala Pro Lys Arg Arg Gly Ser Gly Ser Val Asp
                160               165               170

gag acc ctt ttt gct ctt cct gct gca tct gag cct gtg ata ccc tcc     819
Glu Thr Leu Phe Ala Leu Pro Ala Ala Ser Glu Pro Val Ile Pro Ser
        175               180               185

tct gca gaa aaa att atg gat ttg atg gag cag cca ggt aac act gtt     867
Ser Ala Glu Lys Ile Met Asp Leu Met Glu Gln Pro Gly Asn Thr Val
190               195               200               205

tcg tct ggt caa gag gat ttc cca tct gtc ctg ctt gaa act gct gcc     915
Ser Ser Gly Gln Glu Asp Phe Pro Ser Val Leu Leu Glu Thr Ala Ala
                210               215               220

tct ctt cct tct cta tct cct ctc tca act gtt tct ttt aaa gaa cat     963
Ser Leu Pro Ser Leu Ser Pro Leu Ser Thr Val Ser Phe Lys Glu His
                225               230               235

gga tac ctt ggt aac tta tca gca gtg tca tcc tca gaa gga aca att    1011
Gly Tyr Leu Gly Asn Leu Ser Ala Val Ser Ser Ser Glu Gly Thr Ile
            240               245               250

gaa gaa act tta aat gaa gct tct aaa gag ttg cca gag agg gca aca    1059
Glu Glu Thr Leu Asn Glu Ala Ser Lys Glu Leu Pro Glu Arg Ala Thr
            255               260               265

aat cca ttt gta aat aga gat tta gca gaa ttt tca gaa tta gaa tat    1107
Asn Pro Phe Val Asn Arg Asp Leu Ala Glu Phe Ser Glu Leu Glu Tyr
270               275               280               285

tca gaa atg gga tca tct ttt aaa ggc tcc cca aaa gga gag tca gcc    1155
Ser Glu Met Gly Ser Ser Phe Lys Gly Ser Pro Lys Gly Glu Ser Ala
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25

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ata tta gta gaa aac act aag gaa gaa gta att gtg agg agt aaa gac    1203
Ile Leu Val Glu Asn Thr Lys Glu Glu Val Ile Val Arg Ser Lys Asp
            305                 310                 315

aaa gag gat tta gtt tgt agt gca gcc ctt cac agt cca caa gaa tca    1251
Lys Glu Asp Leu Val Cys Ser Ala Ala Leu His Ser Pro Gln Glu Ser
            320                 325                 330

cct gtg ggt aaa gaa gac aga gtt gtg tct cca gaa aag aca atg gac    1299
Pro Val Gly Lys Glu Asp Arg Val Val Ser Pro Glu Lys Thr Met Asp
    335                 340                 345

att ttt aat gaa atg cag atg tca gta gta gca cct gtg agg gaa gag    1347
Ile Phe Asn Glu Met Gln Met Ser Val Val Ala Pro Val Arg Glu Glu
350                 355                 360                 365

tat gca gac ttt aag cca ttt gaa caa gca tgg gaa gtg aaa gat act    1395
Tyr Ala Asp Phe Lys Pro Phe Glu Gln Ala Trp Glu Val Lys Asp Thr
                370                 375                 380

tat gag gga agt agg gat gtg ctg gct gct aga gct aat gtg gaa agt    1443
Tyr Glu Gly Ser Arg Asp Val Leu Ala Ala Arg Ala Asn Val Glu Ser
            385                 390                 395

aaa gtg gac aga aaa tgc ttg gaa gat agc ctg gag caa aaa agt ctt    1491
Lys Val Asp Arg Lys Cys Leu Glu Asp Ser Leu Glu Gln Lys Ser Leu
            400                 405                 410

ggg aag gat agt gaa ggc aga aat gag gat gct tct ttc ccc agt acc    1539
Gly Lys Asp Ser Glu Gly Arg Asn Glu Asp Ala Ser Phe Pro Ser Thr
    415                 420                 425

cca gaa cct gtg aag gac agc tcc aga gca tat att acc tgt gct tcc    1587
Pro Glu Pro Val Lys Asp Ser Ser Arg Ala Tyr Ile Thr Cys Ala Ser
430                 435                 440                 445

ttt acc tca gca acc gaa agc acc aca gca aac act ttc cct ttg tta    1635
Phe Thr Ser Ala Thr Glu Ser Thr Thr Ala Asn Thr Phe Pro Leu Leu
                450                 455                 460

gaa gat cat act tca gaa aat aaa aca gat gaa aaa aaa ata gaa gaa    1683
Glu Asp His Thr Ser Glu Asn Lys Thr Asp Glu Lys Lys Ile Glu Glu
            465                 470                 475

agg aag gct caa att ata aca gag aag act agc ccc aaa acg tca aat    1731
Arg Lys Ala Gln Ile Ile Thr Glu Lys Thr Ser Pro Lys Thr Ser Asn
            480                 485                 490

cct ttc ctt gta gca gta cag gat tct gag gca gat tat gtt aca aca    1779
Pro Phe Leu Val Ala Val Gln Asp Ser Glu Ala Asp Tyr Val Thr Thr
    495                 500                 505

gat acc tta tca aag gtg act gag gca gca gtg tca aac atg cct gaa    1827
Asp Thr Leu Ser Lys Val Thr Glu Ala Ala Val Ser Asn Met Pro Glu
510                 515                 520                 525
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26

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ggt ctg acg cca gat tta gtt cag gaa gca tgt gaa agt gaa ctg aat      1875
Gly Leu Thr Pro Asp Leu Val Gln Glu Ala Cys Glu Ser Glu Leu Asn
                530                   535                540

gaa gcc aca ggt aca aag att gct tat gaa aca aaa gtg gac ttg gtc      1923
Glu Ala Thr Gly Thr Lys Ile Ala Tyr Glu Thr Lys Val Asp Leu Val
                545                   550                555

caa aca tca gaa gct ata caa gaa tca ctt tac ccc aca gca cag ctt      1971
Gln Thr Ser Glu Ala Ile Gln Glu Ser Leu Tyr Pro Thr Ala Gln Leu
                560                   565                570

tgc cca tca ttt gag gaa gct gaa gca act ccg tca cca gtt ttg cct      2019
Cys Pro Ser Phe Glu Glu Ala Glu Ala Thr Pro Ser Pro Val Leu Pro
575                   580                585

gat att gtt atg gaa gca cca tta aat tct ctc ctt cca agc gct ggt      2067
Asp Ile Val Met Glu Ala Pro Leu Asn Ser Leu Leu Pro Ser Ala Gly
590                   595                600                605

gct tct gta gtg cag ccc agt gta tcc cca ctg gaa gca cct cct cca      2115
Ala Ser Val Val Gln Pro Ser Val Ser Pro Leu Glu Ala Pro Pro Pro
                610                   615                620

gtt agt tat gac agt ata aag ctt gag cct gaa aac ccc cca cca tat      2163
Val Ser Tyr Asp Ser Ile Lys Leu Glu Pro Glu Asn Pro Pro Pro Tyr
                625                   630                635

gaa gaa gcc atg aat gta gca cta aaa gct ttg gga aca aag gaa gga      2211
Glu Glu Ala Met Asn Val Ala Leu Lys Ala Leu Gly Thr Lys Glu Gly
                640                   645                650

ata aaa gag cct gaa agt ttt aat gca gct gtt cag gaa aca gaa gct      2259
Ile Lys Glu Pro Glu Ser Phe Asn Ala Ala Val Gln Glu Thr Glu Ala
655                   660                665

cct tat ata tcc att gcg tgt gat tta att aaa gaa aca aag ctc tcc      2307
Pro Tyr Ile Ser Ile Ala Cys Asp Leu Ile Lys Glu Thr Lys Leu Ser
670                   675                680                685

act gag cca agt cca gat ttc tct aat tat tca gaa ata gca aaa ttc      2355
Thr Glu Pro Ser Pro Asp Phe Ser Asn Tyr Ser Glu Ile Ala Lys Phe
                690                   695                700

gag aag tcg gtg ccc gaa cac gct gag cta gtg gag gat tcc tca cct      2403
Glu Lys Ser Val Pro Glu His Ala Glu Leu Val Glu Asp Ser Ser Pro
                705                   710                715

gaa tct gaa cca gtt gac tta ttt agt gat gat tcg att cct gaa gtc      2451
Glu Ser Glu Pro Val Asp Leu Phe Ser Asp Asp Ser Ile Pro Glu Val
                720                   725                730

cca caa aca caa gag gag gct gtg atg ctc atg aag gag agt ctc act      2499
Pro Gln Thr Gln Glu Glu Ala Val Met Leu Met Lys Glu Ser Leu Thr
735                   740                745

gaa gtg tct gag aca gta gcc cag cac aaa gag gag aga ctt agt gcc      2547
Glu Val Ser Glu Thr Val Ala Gln His Lys Glu Glu Arg Leu Ser Ala
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27

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750                        755                       760                       765

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Ser Pro Gln Glu Leu Gly Lys Pro Tyr Leu Glu Ser Phe Gln Pro Asn
                770                     775                 780

tta cat agt aca aaa gat gct gta tct aat gac att cca aca ttg acc    2643
Leu His Ser Thr Lys Asp Ala Ala Ser Asn Asp Ile Pro Thr Leu Thr
                785                     790                 795

aaa aag gag aaa att tct ttg caa atg gaa gag ttt aat act gca att    2691
Lys Lys Glu Lys Ile Ser Leu Gln Met Glu Glu Phe Asn Thr Ala Ile
            800                     805                 810

tat tca aat gat gac tta ctt tct tct aag gaa gac aaa ata aaa gaa    2739
Tyr Ser Asn Asp Asp Leu Leu Ser Ser Lys Glu Asp Lys Ile Lys Glu
        815                     820                 825

agt gaa aca ttt tca gat tca tct ccg att gag ata ata gat gaa ttt    2787
Ser Glu Thr Phe Ser Asp Ser Ser Pro Ile Glu Ile Ile Asp Glu Phe
830                     835                 840                 845

ccc acg ttt gtc agt gct aaa gat gat tct cct aaa tta gcc aag gag    2835
Pro Thr Phe Val Ser Ala Lys Asp Asp Ser Pro Lys Leu Ala Lys Glu
                850                     855                 860

tac act gat cta gaa gta tcc gac aaa agt gaa att gct aat atc caa    2883
Tyr Thr Asp Leu Glu Val Ser Asp Lys Ser Glu Ile Ala Asn Ile Gln
                865                     870                 875

agc ggg gca gat tca ttg cct tgc tta gaa ttg ccc tgt gac ctt tct    2931
Ser Gly Ala Asp Ser Leu Pro Lys Leu Glu Leu Pro Cys Asp Leu Ser
                880                     885                 890

ttc aag aat ata tat cct aaa gat gaa gta cat gtt tca gat gaa ttc    2979
Phe Lys Asn Ile Tyr Pro Lys Asp Glu Val His Val Ser Asp Glu Phe
        895                     900                 905

tcc gaa aat agg tcc agt gta tct aag gca tcc ata tcg cct tca aat    3027
Ser Glu Asn Arg Ser Ser Val Ser Lys Ala Ser Ile Ser Pro Ser Asn
910                     915                 920                 925

gtc tct gct ttg gaa cct cag aca gaa atg ggc agc ata gtt aaa tcc    3075
Val Ser Ala Leu Glu Pro Gln Thr Glu Met Gly Ser Ile Val Lys Ser
                930                     935                 940

aaa tca ctt acg aaa gaa gca gag aaa aaa ctt cct tct gac aca gag    3123
Lys Ser Leu Thr Lys Glu Ala Glu Lys Lys Leu Pro Ser Asp Thr Glu
                945                     950                 955

aaa gag gac aga tcc ctg tca gct gta ttg tca gca gag ctg agt aaa    3171
Lys Glu Asp Arg Ser Leu Ser Ala Val Leu Ser Ala Glu Leu Ser Lys
        960                     965                 970

act tca gtt gtt gac ctc ctc tac tgg aga gac att aag aag act gga    3219
Thr Ser Val Val Asp Leu Leu Tyr Trp Arg Asp Ile Lys Lys Thr Gly
        975                     980                 985
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28

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gtg gtg ttt ggt gcc agc tta ttc ctg ctg ctg   tct ctg aca gtg ttc        3267
Val Val Phe Gly Ala Ser Leu Phe Leu Leu Leu   Ser Leu Thr Val Phe
990                     995               1000                  1005

agc att gtc agt gta   acg gcc tac att gcc   ttg gcc ctg ctc tcg        3312
Ser Ile Val Ser Val   Thr Ala Tyr Ile Ala   Leu Ala Leu Leu Ser
              1010               1015                  1020

gtg act atc agc ttt   agg ata tat aag ggc   gtg atc cag gct att        3357
Val Thr Ile Ser Phe   Arg Ile Tyr Lys Gly   Val Ile Gln Ala Ile
              1025               1030                  1035

cag aaa tca gat gaa   ggc cac cca ttc agg   gca tat tta gaa tct        3402
Gln Lys Ser Asp Glu   Gly His Pro Phe Arg   Ala Tyr Leu Glu Ser
              1040               1045                  1050

gaa gtt gct ata tca   gag gaa ttg gtt cag   aaa tac agt aat tct        3447
Glu Val Ala Ile Ser   Glu Glu Leu Val Gln   Lys Tyr Ser Asn Ser
              1055               1060                  1065

gct ctt ggt cat gtg   aac agc aca ata aaa   gaa ctg agg cgg ctt        3492
Ala Leu Gly His Val   Asn Ser Thr Ile Lys   Glu Leu Arg Arg Leu
              1070               1075                  1080

ttc tta gtt gat gat   tta gtt gat tcc ctg   aag ttt gca gtg ttg        3537
Phe Leu Val Asp Asp   Leu Val Asp Ser Leu   Lys Phe Ala Val Leu
              1085               1090                  1095

atg tgg gtg ttt act   tat gtt ggt gcc ttg   ttc aat ggt ctg aca        3582
Met Trp Val Phe Thr   Tyr Val Gly Ala Leu   Phe Asn Gly Leu Thr
              1100               1105                  1110

cta ctg att tta gct   ctg atc tca ctc ttc   agt att cct gtt att        3627
Leu Leu Ile Leu Ala   Leu Ile Ser Leu Phe   Ser Ile Pro Val Ile
              1115               1120                  1125

tat gaa cgg cat cag   gtg cag ata gat cat   tat cta gga ctt gca        3672
Tyr Glu Arg His Gln   Val Gln Ile Asp His   Tyr Leu Gly Leu Ala
              1130               1135                  1140

aac aag agt gtt aag   gat gcc atg gcc aaa   atc caa gca aaa atc        3717
Asn Lys Ser Val Lys   Asp Ala Met Ala Lys   Ile Gln Ala Lys Ile
              1145               1150                  1155

cct gga ttg aag cgc   aaa gca gat tga aaaagcccca aacagaagtt        3764
Pro Gly Leu Lys Arg   Lys Ala Asp
              1160

catctttaaa ggggacactc acttgattac gggggtcgga gggtcagggg tgagcccttg        3814

gtggccgtgc ggtttcagct ctttattttt agcagtccac tgtttgagga aaaattacct        3864

gtcttgactt cctgtgttta tcatcttaag tattgtaagc tgctgtgtat ggatctcatt        3944

gtagtcacac ttgtcttccc caatgaggcg cctggtgaat aaaggactcg gggaaagctg        4004

tgcattgtat ctgctgcagg gtagtctagc tgtatgcaga gagttgtaaa gaaggcaaat        4064
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29

```
ttggggcag ggaaaaacct tttcacagtg tactgtgttt ggtagtgta aaactgatgc  4124

agattttttct gaaatgaaat gtttagatga gagcatacta ttaaaggaaga gtggaaaact  4184

ctgtctttat ggtgtgttct aggtgtattg tgaatttact gttatattgc caatataagt  4214

aaatatagac ctaatctata tatagtgttt cacaaagctt agatctttaa ccttgcagct  4304

gccccacagt gcttgacctc tgagtcattg gttatgcagt gtagtccaag cacataaact  4364

aggaagagaa atgtatttgt aggagtgcta cctaccacct gttttcaaga aaatatagaa  4424

ctccaacaaa aatatagaat gtcatttcaa agacttactg tatgtatagt taattttgtc  4484

acagactctg aaattctatg gactgaattt catgcttcca aatgtttgca gttatcaaac  4544

tttgttatgc aagaaatcat aaaatgaaga cttataccat tgtggtttaa gccgtactga  4604

tttatctgtg gaatgcattg tgaactgtaa aagcaaagta tcaataaagc ttatagatct  4664

taaaaaaaaa aaaaaaaaa                                                  4684
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<210> 18
<211> 1163
<212> PRT
<213> Rattus norvegicus

<400> 18

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Met Glu Asp Ile Asp Gln Ser Ser Leu Val Ser Ser Ser Thr Asp Ser
1               5                  10                  15


Pro Pro Arg Pro Pro Pro Ala Phe Lys Tyr Gln Phe Val Thr Glu Pro
            20                  25                  30


Glu Asp Glu Glu Asp Glu Glu Glu Glu Glu Asp Glu Glu Glu Asp Asp
        35                  40                  45


Glu Asp Leu Glu Glu Leu Glu Val Leu Glu Arg Lys Pro Ala Ala Gly
    50                  55                  60


Leu Ser Ala Ala Ala Val Pro Pro Ala Ala Ala Ala Pro Leu Leu Asp
65                  70                  75                  80


Phe Ser Ser Asp Ser Val Pro Pro Ala Pro Arg Gly Pro Leu Pro Ala
                85                  90                  95


Ala Pro Pro Ala Ala Pro Glu Arg Gln Pro Ser Trp Glu Arg Ser Pro
            100                 105                 110
```

30

Ala Ala Pro Ala Pro Ser Leu Pro Pro Ala Ala Ala Val Leu Pro Ser
        115   120   125

Lys Leu Pro Glu Asp Asp Glu Pro Pro Ala Arg Pro Pro Pro Pro Pro
    130   135   140

Pro Ala Gly Ala Ser Pro Leu Ala Glu Pro Ala Ala Pro Pro Ser Thr
145   150   155   160

Pro Ala Ala Pro Lys Arg Arg Gly Ser Gly Ser Val Asp Glu Thr Leu
                165   170   175

Phe Ala Leu Pro Ala Ala Ser Glu Pro Val Ile Pro Ser Ser Ala Glu
                180   185   190

Lys Ile Met Asp Leu Met Glu Gln Pro Gly Asn Thr Val Ser Ser Gly
            195   200   205

Gln Glu Asp Phe Pro Ser Val Leu Leu Glu Thr Ala Ala Ser Leu Pro
    210   215   220

Ser Leu Ser Pro Leu Ser Thr Val Ser Phe Lys Glu His Gly Tyr Leu
225   230   235   240

Gly Asn Leu Ser Ala Val Ser Ser Ser Glu Gly Thr Ile Glu Glu Thr
                245   250   255

Leu Asn Glu Ala Ser Lys Glu Leu Pro Glu Arg Ala Thr Asn Pro Phe
                260   265   270

Val Asn Arg Asp Leu Ala Glu Phe Ser Glu Leu Glu Tyr Ser Glu Met
            275   280   285

Gly Ser Ser Phe Lys Gly Ser Pro Lys Gly Glu Ser Ala Ile Leu Val
    290   295   300

Glu Asn Thr Lys Glu Glu Val Ile Val Arg Ser Lys Asp Lys Glu Asp
305   310   315   320

Leu Val Cys Ser Ala Ala Leu His Ser Pro Gln Glu Ser Pro Val Gly
                325   330   335

Lys Glu Asp Arg Val Val Ser Pro Glu Lys Thr Met Asp Ile Phe Asn
            340   345   350

31

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Glu Met Gln Met Ser Val Val Ala Pro Val Arg Glu Glu Tyr Ala Asp
        355             360             365

Phe Lys Pro Phe Glu Gln Ala Trp Glu Val Lys Asp Thr Tyr Glu Gly
        370             375             380

Ser Arg Asp Val Leu Ala Ala Arg Ala Asn Val Glu Ser Lys Val Asp
385             390             395             400

Arg Lys Cys Leu Glu Asp Ser Leu Glu Gln Lys Ser Leu Gly Lys Asp
            405             410             415

Ser Glu Gly Arg Asn Glu Asp Ala Ser Phe Pro Ser Thr Pro Glu Pro
            420             425             430

Val Lys Asp Ser Ser Arg Ala Tyr Ile Thr Cys Ala Ser Phe Thr Ser
        435             440             445

Ala Thr Glu Ser Thr Thr Ala Asn Thr Phe Pro Leu Leu Glu Asp His
        450             455             460

Thr Ser Glu Asn Lys Thr Asp Glu Lys Lys Ile Glu Glu Arg Lys Ala
465             470             475             480

Gln Ile Ile Thr Glu Lys Thr Ser Pro Lys Thr Ser Asn Pro Phe Leu
            485             490             495

Val Ala Val Gln Asp Ser Glu Ala Asp Tyr Val Thr Thr Asp Thr Leu
        500             505             510

Ser Lys Val Thr Glu Ala Ala Val Ser Asn Met Pro Glu Gly Leu Thr
        515             520             525

Pro Asp Leu Val Gln Glu Ala Cys Glu Ser Glu Leu Asn Glu Ala Thr
        530             535             540

Gly Thr Lys Ile Ala Tyr Glu Thr Lys Val Asp Leu Val Gln Thr Ser
545             550             555             560

Glu Ala Ile Gln Glu Ser Leu Tyr Pro Thr Ala Gln Leu Cys Pro Ser
            565             570             575
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Phe Glu Glu Ala Glu Ala Thr Pro Ser Pro Val Leu Pro Asp Ile Val
            580   585   590

Met Glu Ala Pro Leu Asn Ser Leu Leu Pro Ser Ala Gly Ala Ser Val
            595   600   605

Val Gln Pro Ser Val Ser Pro Leu Glu Ala Pro Pro Pro Val Ser Tyr
    610   615   620

Asp Ser Ile Lys Leu Glu Pro Glu Asn Pro Pro Pro Tyr Glu Glu Ala
625   630   635   640

Met Asn Val Ala Leu Lys Ala Leu Gly Thr Lys Glu Gly Ile Lys Glu
                645   650   655

Pro Glu Ser Phe Asn Ala Ala Val Gln Glu Thr Glu Ala Pro Tyr Ile
            660   665   670

Ser Ile Ala Cys Asp Leu Ile Lys Glu Thr Lys Leu Ser Thr Glu Pro
            675   680   685

Ser Pro Asp Phe Ser Asn Tyr Ser Glu Ile Ala Lys Phe Glu Lys Ser
            690   695   700

Val Pro Glu His Ala Glu Leu Val Glu Asp Ser Ser Pro Glu Ser Glu
705   710   715   720

Pro Val Asp Leu Phe Ser Asp Asp Ser Ile Pro Glu Val Pro Gln Thr
                725   730   735

Gln Glu Glu Ala Val Met Leu Met Lys Glu Ser Leu Thr Glu Val Ser
            740   745   750

Glu Thr Val Ala Gln His Lys Glu Glu Arg Leu Ser Ala Ser Pro Gln
            755   760   765

Glu Leu Gly Lys Pro Tyr Leu Glu Ser Phe Gln Pro Asn Leu His Ser
            770   775   780

Thr Lys Asp Ala Ala Ser Asn Asp Ile Pro Thr Leu Thr Lys Lys Glu
785   790   795   800

Lys Ile Ser Leu Gln Met Glu Glu Phe Asn Thr Ala Ile Tyr Ser Asn
                805   810   815

33

Asp Asp Leu Leu Ser Ser Lys Glu Asp Lys Ile Lys Glu Ser Glu Thr
        820   825   830

Phe Ser Asp Ser Ser Pro Ile Glu Ile Ile Asp Glu Phe Pro Thr Phe
        835   840   845

Val Ser Ala Lys Asp Asp Ser Pro Lys Leu Ala Lys Glu Tyr Thr Asp
    850   955   860

Leu Glu Val Ser Asp Lys Ser Glu Ile Ala Asn Ile Gln Ser Gly Ala
865   870   875   880

Asp Ser Leu Pro Cys Leu Glu Leu Pro Cys Asp Leu Ser Phe Lys Asn
                885   890   895

Ile Tyr Pro Lys Asp Glu Val His Val Ser Asp Glu Phe Ser Glu Asn
            900   905   910

Arg Ser Ser Val Ser Lys Ala Ser Ile Ser Pro Ser Asn Val Ser Ala
        915   920   925

Leu Glu Pro Gln Thr Glu Met Gly Ser Ile Val Lys Ser Lys Ser Leu
    930   935   940

Thr Lys Glu Ala Glu Lys Lys Leu Pro Ser Asp Thr Glu Lys Glu Asp
945   950   955   960

Arg Ser Leu Ser Ala Val Leu Ser Ala Glu Leu Ser Lys Thr Ser Val
            965   970   975

Val Asp Leu Leu Tyr Trp Arg Asp Ile Lys Lys Thr Gly Val Val Phe
        980   985   990

Gly Ala Ser Leu Phe Leu Leu Leu Ser Leu Thr Val Phe Ser Ile Val
        995   1000   1005

Ser Val Thr Ala Tyr Ile Ala Leu Ala Leu Leu Ser Val Thr Ile
    1010   1015   1020

Ser Phe Arg Ile Tyr Lys Gly Val Ile Gln Ala Ile Gln Lys Ser
    1025   1030   1035

Asp Glu Gly His Pro Phe Arg Ala Tyr Leu Glu Ser Glu Val Ala
    1040   1045   1050

Ile Ser Glu Glu Leu Val Gln Lys Tyr Ser Asn Ser Ala Leu Gly
    1055   1060   1065

His Val Asn Ser Thr Ile Lys Glu Leu Arg Arg Leu Phe Leu Val
    1070   1075   1080

Asp Asp Leu Val Asp Ser Leu Lys Phe Ala Val Leu Met Trp Val
    1085   1090   1095

Phe Thr Tyr Val Gly Ala Leu Phe Asn Gly Leu Thr Leu Leu Ile
    1100   1105   1110

Leu Ala Leu Ile Ser Leu Phe Ser Ile Pro Val Ile Tyr Glu Arg
    1115   1120   1125

His Gln Val Gln Ile Asp His Tyr Leu Gly Leu Ala Asn Lys Ser
    1130   1135   1140

Val Lys Asp Ala Met Ala Lys Ile Gln Ala Lys Ile Pro Gly Leu
    1145   1150   1155

Lys Arg Lys Ala Asp
    1160

<210> 19
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<212> PRT
<213> Rattus norvegicus

<400> 19

Ser Tyr Asp Ser Ile Lys Leu Glu Pro Glu Asn Pro Pro Pro Tyr Glu
1   5   10   15

Glu Ala

<210> 20
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<212> PRT
<213> Rattus norvegicus

<400> 20

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Met Glu Asp Ile Asp Gln Ser Ser Leu Val Ser Ser Ser Thr Asp Ser
1               5               10              15


Pro Pro Arg Pro Pro Pro Ala Phe Lys Tyr Gln Phe Val Thr Glu Pro
            20              25              30


Glu Asp Glu Glu Asp Glu Glu Glu Glu Glu Asp Glu Glu Glu Asp Asp
        35              40              45


Glu Asp Leu Glu Glu Leu Glu Val Leu Glu Arg Lys Pro Ala Ala Gly
    50              55              60


Leu Ser Ala Ala Ala Val Pro Pro Ala Ala Ala Ala Pro Leu Leu Asp
65              70              75              80


Phe Ser Ser Asp Ser Val Pro Pro Ala Pro Arg Gly Pro Leu Pro Ala
            85              90              95


Ala Pro Pro Ala Ala Pro Glu Arg Gln Pro Ser Trp Glu Arg Ser Pro
            100             105             110


Ala Ala Pro Ala Pro Ser Leu Pro Pro Ala Ala Ala Val Leu Pro Ser
            115             120             125


Lys Leu Pro Glu Asp Asp Glu Pro Pro Ala Arg Pro Pro Pro Pro Pro
    130             135             140


Pro Ala Gly Ala Ser Pro Leu Ala Glu Pro Ala Ala Pro Pro Ser Thr
145             150             155             160


Pro Ala Ala Pro Lys Arg Arg Gly Ser Gly Ser Val Val Val Asp Leu
            165             170             175


Leu Tyr Trp Arg Asp Ile Lys Lys Thr Gly Val Val Phe Gly Ala Ser
            180             185             190


Leu Phe Leu Leu Leu Ser Leu Thr Val Phe Ser Ile Val Ser Val Thr
            195             200             205


Ala Tyr Ile Ala Leu Ala Leu Leu Ser Val Thr Ile Ser Phe Arg Ile
    210             215             220


Tyr Lys Gly Val Ile Gln Ala Ile Gln Lys Ser Asp Glu Gly His Pro
225             230             235             240
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36

Phe Arg Ala Tyr Leu Glu Ser Glu Val Ala Ile Ser Glu Glu Leu Val
                245   250   255

Gln Lys Tyr Ser Asn Ser Ala Leu Gly His Val Asn Ser Thr Ile Lys
                260   265   270

Glu Leu Arg Arg Leu Phe Leu Val Asp Asp Leu Val Asp Ser Leu Lys
                275   280   285

Phe Ala Val Leu Met Trp Val Phe Thr Tyr Val Gly Ala Leu Phe Asn
        290   295   300

Gly Leu Thr Leu Leu Ile Leu Ala Leu Ile Ser Leu Phe Ser Ile Pro
305   310   315   320

Val Ile Tyr Glu Arg His Gln Val Gln Ile Asp His Tyr Leu Gly Leu
                325   330   335

Ala Asn Lys Ser Val Lys Asp Ala Met Ala Lys Ile Gln Ala Lys Ile
                340   345   350

Pro Gly Leu Lys Arg Lys Ala Asp
            355   360

<210> 21
<211> 199
<212> PRT
<213> Rattus norvegicus

<400> 21

Met Asp Gly Gln Lys Lys His Trp Lys Asp Lys Val Val Asp Leu Leu
1   5   10   15

Tyr Trp Arg Asp Ile Lys Lys Thr Gly Val Val Phe Gly Ala Ser Leu
                20   25   30

Phe Leu Leu Leu Ser Leu Thr Val Phe Ser Ile Val Ser Val Thr Ala
            35   40   45

Tyr Ile Ala Leu Ala Leu Leu Ser Val Thr Ile Ser Phe Arg Ile Tyr
    50   55   60

Lys Gly Val Ile Gln Ala Ile Gln Lys Ser Asp Glu Gly His Pro Phe

37

Arg Ala Tyr Leu Glu Ser Glu Val Ala Ile Ser Glu Glu Leu Val Gln
                 85   90   95

Lys Tyr Ser Asn Ser Ala Leu Gly His Val Asn Ser Thr Ile Lys Glu
                 100   105   110

Leu Arg Arg Leu Phe Leu Val Asp Asp Leu Val Asp Ser Leu Lys Phe
                 115   120   125

Ala Val Leu Met Trp Val Phe Thr Tyr Val Gly Ala Leu Phe Asn Gly
                 130   135   140

Leu Thr Leu Leu Ile Leu Ala Leu Ile Ser Leu Phe Ser Ile Pro Val
145   150   155   160

Ile Tyr Glu Arg His Gln Val Gln Ile Asp His Tyr Leu Gly Leu Ala
                 165   170   175

Asn Lys Ser Val Lys Asp Ala Met Ala Lys Ile Gln Ala Lys Ile Pro
                 180   185   190

Gly Leu Lys Arg Lys Ala Asp
                 195

<210>   22
<211>   3579
<212>   DNA
<213>   Homo sapiens

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<222>   (1)..(3579)
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atg gaa gac ctg gac cag tct cct ctg gtc tcg tcc tcg gac agc cca   48
Met Glu Asp Leu Asp Gln Ser Pro Leu Val Ser Ser Ser Asp Ser Pro
1   5   10   15

ccc cgg ccg cag ccc gcg ttc aag tac cag ttc gtg agg gag ccc gag   96
Pro Arg Pro Gln Pro Ala Phe Lys Tyr Gln Phe Val Arg Glu Pro Glu
                 20   25   30

gac gag gag gaa gaa gag gag gag gaa gag gag gac gag gac gaa gac   144
Asp Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Asp Glu Asp Glu Asp
                 35   40   45

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ctg gag gag ct; gag gtg ctg gag agg aag ccc gcc gcc ggg ctg tcc    192
Leu Glu Glu Leu Gln Val Leu Glu Arg Lys Pro Ala Ala Gly Leu Ser
    50              55                 60

gcg gcc cca gtg ccc acc gcc cct gcc gcc ggc gcg ccc ctg atg gac    240
Ala Ala Pro Val Pro Thr Ala Pro Ala Ala Gly Ala Pro Leu Met Asp
65              70              75                 80

ttc gga aat gat ttc gtg ccg ccg gcg ccc cgg gga ccc ctg ccg gcc    288
Phe Gly Asn Asp Phe Val Pro Pro Ala Pro Arg Gly Pro Leu Pro Ala
                85              90              95

gct ccc ccc gtc gcc ccg gag cgg cag ccg tct tgg gac ccg agc ccg    336
Ala Pro Pro Val Ala Pro Glu Arg Gln Pro Ser Trp Asp Pro Ser Pro
                100             105             110

gtg tcg tcg acc gtg ccc gcg cca tcc ccg ctg tct gct gcc gca gtc    384
Val Ser Ser Thr Val Pro Ala Pro Ser Pro Leu Ser Ala Ala Ala Val
            115             120             125

tcg ccc tcc aag ctc cct gag gac gac gag cct ccg gcc cgg cct ccc    432
Ser Pro Ser Lys Leu Pro Glu Asp Asp Glu Pro Pro Ala Arg Pro Pro
    130             135             140

cct cct ccc ccg gcc agc gtg agc ccc cag gca gag ccc gtg tgg acc    480
Pro Pro Pro Pro Ala Ser Val Ser Pro Gln Ala Glu Pro Val Trp Thr
145             150             155             160

ccg cca gcc ccg gct ccc gcc gag ccc ccc tcc acc ccg gcc gcg ccc    528
Pro Pro Ala Pro Ala Pro Ala Ala Pro Pro Ser Thr Pro Ala Ala Pro
                165             170             175

aag cgc agg ggc tcc tcg ggc tca gtg gat gag acc ctt ttt gct ctt    576
Lys Arg Arg Gly Ser Ser Gly Ser Val Asp Glu Thr Leu Phe Ala Leu
            180             185             190

cct gct gca tct gag cct gtg ata cgc tcc tct gca gaa aat atg gac    624
Pro Ala Ala Ser Glu Pro Val Ile Arg Ser Ser Ala Glu Asn Met Asp
            195             200             205

ttg aag gag cag cca ggt aac act att tcg gct ggt caa gag gat ttc    672
Leu Lys Glu Gln Pro Gly Asn Thr Ile Ser Ala Gly Gln Glu Asp Phe
    210             215             220

cca tct gtc ctg ctt gaa act gct gct tct ctt cct tct ttg tct cct    720
Pro Ser Val Leu Leu Glu Thr Ala Ala Ser Leu Pro Ser Leu Ser Pro
225             230             235             240

ctc tca gcc gct tct ttc aaa gaa cat gaa tac ctt ggt aat ttg tca    768
Leu Ser Ala Ala Ser Phe Lys Glu His Glu Tyr Leu Gly Asn Leu Ser
                245             250             255

aca gta tta ccc act gaa gga aca ctt caa gaa aat gtc agt gaa gct    816
Thr Val Leu Pro Thr Glu Gly Thr Leu Gln Glu Asn Val Ser Glu Ala
                260             265             270

tct aaa gag gtc tca gag aag gca aaa act cta ctc ata gat aga gat    864
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Ser Lys Glu Val Ser Glu Lys Ala Lys Thr Leu Leu Ile Asp Arg Asp
        275                 280                 285

tta aca gag ttt tca gaa tta gaa tac tta gaa atg gga tca tcg ttc    912
Leu Thr Glu Phe Ser Glu Leu Glu Tyr Ser Glu Met Gly Ser Ser Phe
        290                 295                 300

agt gtc tct cca gaa gca gaa tct gcc gta ata gta gca aat cct agg    960
Ser Val Ser Pro Lys Ala Glu Ser Ala Val Ile Val Ala Asn Pro Arg
305                 310                 315                 320

gaa gaa ata atc gtg aaa aat aaa gat gaa gaa gag aag tta gtt agt    1008
Glu Glu Ile Ile Val Lys Asn Lys Asp Glu Glu Glu Lys Leu Val Ser
                    325                 330                 335

aat aac atc ctt cat aat caa caa gag tta cct aca gct ctt act aaa    1056
Asn Asn Ile Leu His Asn Gln Gln Glu Leu Pro Thr Ala Leu Thr Lys
                340                 345                 350

ttg gtt aaa gag gat gaa gtt gtg tct tca gaa aaa gca aaa gac agt    1104
Leu Val Lys Glu Asp Glu Val Val Ser Ser Glu Lys Ala Lys Asp Ser
            355                 360                 365

ttt aat gaa aag aga gtt gca gtg gaa gct cct atg agg gag gaa tat    1152
Phe Asn Glu Lys Arg Val Ala Val Glu Ala Pro Met Arg Glu Glu Tyr
        370                 375                 380

gca gac ttc aaa cca ttt gag cga gta tgg gaa gtg aaa gat agt aag    1200
Ala Asp Phe Lys Pro Phe Glu Arg Val Trp Glu Val Lys Asp Ser Lys
385                 390                 395                 400

gaa gat agt gat atg ttg gct gct gga ggt aaa atc gag agc aac ttg    1248
Glu Asp Ser Asp Met Leu Ala Ala Gly Gly Lys Ile Glu Ser Asn Leu
                    405                 410                 415

gaa agt aaa gtg gat aaa aaa tgt ttt gca gat agc ctt gag caa act    1296
Glu Ser Lys Val Asp Lys Lys Cys Phe Ala Asp Ser Leu Glu Gln Thr
                410                 425                 430

aat cac gaa aaa gat agt gag agt agt aat gat gat act tct ttc ccc    1344
Asn His Glu Lys Asp Ser Glu Ser Ser Asn Asp Asp Thr Ser Phe Pro
                435                 440                 445

agt acg cca gaa ggt ata aag gat cgt cca gga gca tat atc aca tgt    1392
Ser Thr Pro Glu Gly Ile Lys Asp Arg Pro Gly Ala Tyr Ile Thr Cys
        450                 455                 460

gct ccc ttt aac cca gca gca act gag agc att gca aca aac att ttt    1440
Ala Pro Phe Asn Pro Ala Ala Thr Glu Ser Ile Ala Thr Asn Ile Phe
465                 470                 475                 480

cct ttg tta gga gat cct act tca gaa aat aag acc gat gaa aaa aaa    1488
Pro Leu Leu Gly Asp Pro Thr Ser Glu Asn Lys Thr Asp Glu Lys Lys
                    485                 490                 495

ata gaa gaa aag aag gcc caa ata gta aca gag aag aat act agc acc    1536
Ile Glu Glu Lys Lys Ala Gln Ile Val Thr Glu Lys Asn Thr Ser Thr
                500                 505                 510
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40

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aaa aca tca aac cct ttt ctt gta gaa gaa aag gat tct gag aca gat      1584
Lys Thr Ser Asn Pro Phe Leu Val Ala Ala Gln Asp Ser Glu Thr Asp
        515                 520                 525

tat gtc aca aca gat aat tta aca aag gtg act gag gaa gtc gtg gca      1632
Tyr Val Thr Thr Asp Asn Leu Thr Lys Val Thr Glu Glu Val Val Ala
        530                 535                 540

aac atg cct gaa ggc ctg act cca gat tta gta cag gaa gca tgt gaa      1680
Asn Met Pro Glu Gly Leu Thr Pro Asp Leu Val Gln Glu Ala Cys Glu
545                 550                 555                 560

agt gaa ttg aat gaa gtt act ggt aca aag att gct tat gaa aca aaa      1728
Ser Glu Leu Asn Glu Val Thr Gly Thr Lys Ile Ala Tyr Glu Thr Lys
                565                 570                 575

atg gac ttg gtt caa aca tca gaa gtt atg caa gag tca ctc tat cct      1776
Met Asp Leu Val Gln Thr Ser Glu Val Met Gln Glu Ser Leu Tyr Pro
            580                 585                 590

gca gca cag ctt tgc cca tca ttt gaa gag tca gaa gct act cct tca      1824
Ala Ala Gln Leu Cys Pro Ser Phe Glu Glu Ser Glu Ala Thr Pro Ser
            595                 600                 605

cca gtt ttg cct gac att gtt atg gaa gca cca ttg aat tct gca gtt      1872
Pro Val Leu Pro Asp Ile Val Met Glu Ala Pro Leu Asn Ser Ala Val
            610                 615                 620

cct agt gct ggt gct tcc gtg ata cag ccc agc tca tca cca tta gaa      1920
Pro Ser Ala Gly Ala Ser Val Ile Gln Pro Ser Ser Ser Pro Leu Glu
625                 630                 635                 640

gct tct tca gtt aat tat gaa agc ata aaa cat gag cct gaa aac ccc      1968
Ala Ser Ser Val Asn Tyr Glu Ser Ile Lys His Glu Pro Glu Asn Pro
                645                 650                 655

cca cca tat gaa gag gcc atg agt gta tca cta aaa aaa gta tca gga      2016
Pro Pro Tyr Glu Glu Ala Met Ser Val Ser Leu Lys Lys Val Ser Gly
                660                 665                 670

ata aag gaa gaa att aaa gag cct gaa aat att aat gca gct ctt caa      2064
Ile Lys Glu Glu Ile Lys Glu Pro Glu Asn Ile Asn Ala Ala Leu Gln
        675                 680                 685

gaa aca gaa gct cct tat ata tct att gca tgt gat tta att aaa gaa      2112
Glu Thr Glu Ala Pro Tyr Ile Ser Ile Ala Cys Asp Leu Ile Lys Glu
        690                 695                 700

aca aag ctt tct gct gaa cca gct ccg gat ttc tct gat tat tca gaa      2160
Thr Lys Leu Ser Ala Glu Pro Ala Pro Asp Phe Ser Asp Tyr Ser Glu
705                 710                 715                 720

atg gca aaa gtt gaa cag cca gtg cct gat cat tct gag cta gtt gaa      2208
Met Ala Lys Val Glu Gln Pro Val Pro Asp His Ser Glu Leu Val Glu
                725                 730                 735

gat tcc tca cct gat tct gaa cca gtt gac tta ttt agt gat gat tca      2256
```

41

Asp Ser Ser Pro Asp Ser Glu Pro Val Asp Leu Phe Ser Asp Asp Ser
          740   745   750

ata cct gac gtt cca caa aaa caa gat gaa act gtg atg ctt gtg aaa   2304
Ile Pro Asp Val Pro Gln Lys Gln Asp Glu Thr Val Met Leu Val Lys
          755   760   765

gaa agt ctc act gag act tca ttt gag tca atg ata gaa tat gaa aat   2352
Glu Ser Leu Thr Glu Thr Ser Phe Glu Ser Met Ile Glu Tyr Glu Asn
          770   775   780

aag gaa aaa ctc agt gct ttg cca cct gag gga gga aag cca tat ttg   2400
Lys Glu Lys Leu Ser Ala Leu Pro Pro Glu Gly Gly Lys Pro Tyr Leu
785   790   795   800

gaa tct ttt aag ctc agt tta gat aat aca aaa gat acc ctg tta cct   2448
Glu Ser Phe Lys Leu Ser Leu Asp Asn Thr Lys Asp Thr Leu Leu Pro
                    805   810   815

gat gaa gtt tca aca ttg agc aaa aag gag aaa att cct ttg cag atg   2496
Asp Glu Val Ser Thr Leu Ser Lys Lys Glu Lys Ile Pro Leu Gln Met
                    820   825   830

gag gag ctc agt act gca gtt tat tca aat gat gac tta ttt att tct   2544
Glu Glu Leu Ser Thr Ala Val Tyr Ser Asn Asp Asp Leu Phe Ile Ser
                    835   840   845

aag gaa gca cag ata aga gaa act gaa acg ttt tca gat tca tct cca   2592
Lys Glu Ala Gln Ile Arg Glu Thr Glu Thr Phe Ser Asp Ser Ser Pro
850   855   860

att gaa att ata gat gag ttc cct aca ttg atc agt tct aaa act gat   2640
Ile Glu Ile Ile Asp Glu Phe Pro Thr Leu Ile Ser Ser Lys Thr Asp
865   870   875   880

tca ttt tct aaa tta gcc agg gaa tat act gac cta gaa gta tcc cac   2688
Ser Phe Ser Lys Leu Ala Arg Glu Tyr Thr Asp Leu Glu Val Ser His
                    885   890   895

aaa agt gaa att gct aat gcc ccg gat gga gct ggg tca ttg cct tgc   2736
Lys Ser Glu Ile Ala Asn Ala Pro Asp Gly Ala Gly Ser Leu Pro Cys
                    900   905   910

aca gaa ttg cct cat gac ctt tct ttg aag aac ata caa ccc aaa gtt   2784
Thr Glu Leu Pro His Asp Leu Ser Leu Lys Asn Ile Gln Pro Lys Val
                    915   920   925

gaa gag aaa atc agt ttc tca gat gaa ttt tct aaa aat ggg tct gct   2832
Glu Glu Lys Ile Ser Phe Ser Asp Glu Phe Ser Lys Asn Gly Ser Ala
930   935   940

aca tca aag gtg ctc tta ttg cct cca gat gtt tct gct ttg gcc act   2880
Thr Ser Lys Val Leu Leu Leu Pro Pro Asp Val Ser Ala Leu Ala Thr
945   950   955   960

caa gca gag ata gag agc ata gtt aaa ccc aaa gtt ctt gtg aaa gaa   2928
Gln Ala Glu Ile Glu Ser Ile Val Lys Pro Lys Val Leu Val Lys Glu
                    965   970   975

42

```
gct gag aaa aaa ttt cct tcc gat aca gaa aaa gag gac aga tca cca        2976
Ala Glu Lys Lys Leu Pro Ser Asp Thr Glu Lys Glu Asp Arg Ser Pro
            980                     985                 990

tct gct ata ttt tca gca gag ctg  agt aaa act tca gtt  gtt gac ctc      3024
Ser Ala Ile Phe Ser Ala Glu Leu  Ser Lys Thr Ser Val  Val Asp Leu
        995                 1000                1005

ctg tac  tgg aga gac att aag  aag act gga gtg gtg  ttt ggt gcc         3069
Leu Tyr  Trp Arg Asp Ile Lys  Lys Thr Gly Val Val  Phe Gly Ala
    1010                1015                1020

agc cta  ttc ctg ctg ctt tca  ttg aca gta ttc agt  att gtg agc         3114
Ser Leu  Phe Leu Leu Leu Ser  Leu Thr Val Phe Ser  Ile Val Ser
    1025                1030                1035

gta aca  gcc tac att gcc ttg  gcc ctg ctc tct gtt  acc atc agc         3159
Val Thr  Ala Tyr Ile Ala Leu  Ala Leu Leu Ser Val  Thr Ile Ser
    1040                1045                1050

ttt agg  ata tac aag ggt gtg  atc caa gct atc cag  aaa tca gat         3204
Phe Arg  Ile Tyr Lys Gly Val  Ile Gln Ala Ile Gln  Lys Ser Asp
    1055                1060                1065

gaa ggc  cac cca ttc agg gca  tat ctg gaa tct gaa  gtt gct ata         3249
Glu Gly  His Pro Phe Arg Ala  Tyr Leu Glu Ser Glu  Val Ala Ile
    1070                1075                1080

tct gag  gag ttg gtt cag aag  tac agt aat tct gct  ctt ggt cat         3294
Ser Glu  Glu Leu Val Gln Lys  Tyr Ser Asn Ser Ala  Leu Gly His
    1085                1090                1095

gtg aat  tgc acg ata aag gaa  ctc agg cgc ctc ttt  tta gtt gat         3339
Val Asn  Cys Thr Ile Lys Glu  Leu Arg Arg Leu Phe  Leu Val Asp
    1100                1105                1110

gat tta  gtt gat tct ctg aag  ttt gca gtg ttg atg  tgg gta ttt         3384
Asp Leu  Val Asp Ser Leu Lys  Phe Ala Val Leu Met  Trp Val Phe
    1115                1120                1125

acc tat  gtt ggt gcc ttg ttt  aat ggt ctg aca cta  ctg att ttg         3429
Thr Tyr  Val Gly Ala Leu Phe  Asn Gly Leu Thr Leu  Leu Ile Leu
    1130                1135                1140

gct ctt  att tca ctc ttc agt  gtt cct gtt att tat  gaa cgg cat         3474
Ala Leu  Ile Ser Leu Phe Ser  Val Pro Val Ile Tyr  Glu Arg His
    1145                1150                1155

cag gcg  cag ata gat cat tat  cta gga ctt gca aat  aag aat gtt         3519
Gln Ala  Gln Ile Asp His Tyr  Leu Gly Leu Ala Asn  Lys Asn Val
    1160                1165                1170

aaa gat  gct atg gct aaa atc  caa gca aaa atc cct  gga ttg aag         3564
Lys Asp  Ala Met Ala Lys Ile  Gln Ala Lys Ile Pro  Gly Leu Lys
    1175                1180                1185

cgc aaa  gct gaa tga                                                    3579
```

Arg Lys Ala Gln
     1190

<210> 23
<211> 1192
<212> PRT
<213> Homo sapiens

<400> 23

Met Glu Asp Leu Asp Gln Ser Pro Leu Val Ser Ser Ser Asp Ser Pro
1   5   10   15

Pro Arg Pro Gln Pro Ala Phe Lys Tyr Gln Phe Val Arg Glu Pro Glu
                20   25   30

Asp Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Asp Glu Asp Glu Asp
            35   40   45

Leu Glu Glu Leu Glu Val Leu Glu Arg Lys Pro Ala Ala Gly Leu Ser
        50   55   60

Ala Ala Pro Val Pro Thr Ala Pro Ala Ala Gly Ala Pro Leu Met Asp
65   70   75   80

Phe Gly Asn Asp Phe Val Pro Pro Ala Pro Arg Gly Pro Leu Pro Ala
                85   90   95

Ala Pro Pro Val Ala Pro Glu Arg Gln Pro Ser Trp Asp Pro Ser Pro
                100   105   110

Val Ser Ser Thr Val Pro Ala Pro Ser Pro Leu Ser Ala Ala Ala Val
            115   120   125

Ser Pro Ser Lys Leu Pro Glu Asp Asp Glu Pro Pro Ala Arg Pro Pro
        130   135   140

Pro Pro Pro Pro Ala Ser Val Ser Pro Gln Ala Glu Pro Val Trp Thr
145   150   155   160

Pro Pro Ala Pro Ala Pro Ala Ala Pro Pro Ser Thr Pro Ala Ala Pro
                165   170   175

Lys Arg Arg Gly Ser Ser Gly Ser Val Asp Glu Thr Leu Phe Ala Leu
                180   185   190

Pro Ala Ala Ser Glu Pro Val Ile Arg Ser Ser Ala Glu Asn Met Asp
            195   200   205

Leu Lys Glu Gln Pro Gly Asn Thr Ile Ser Ala Gly Gln Glu Asp Phe
            210   215   220

Pro Ser Val Leu Leu Glu Thr Ala Ala Ser Leu Pro Ser Leu Ser Pro
225   230   235   240

Leu Ser Ala Ala Ser Phe Lys Glu His Glu Tyr Leu Gly Asn Leu Ser
                  245   250   255

Thr Val Leu Pro Thr Glu Gly Thr Leu Gln Glu Asn Val Ser Glu Ala
                  260   265   270

Ser Lys Glu Val Ser Glu Lys Ala Lys Thr Leu Leu Ile Asp Arg Asp
            275   280   285

Leu Thr Glu Phe Ser Glu Leu Glu Tyr Ser Glu Met Gly Ser Ser Phe
            290   295   300

Ser Val Ser Pro Lys Ala Glu Ser Ala Val Ile Val Ala Asn Pro Arg
305   310   315   320

Glu Glu Ile Ile Val Lys Asn Lys Asp Glu Glu Glu Lys Leu Val Ser
                  325   330   335

Asn Asn Ile Leu His Asn Gln Gln Glu Leu Pro Thr Ala Leu Thr Lys
                  340   345   350

Leu Val Lys Glu Asp Glu Val Val Ser Ser Glu Lys Ala Lys Asp Ser
            355   360   365

Phe Asn Glu Lys Arg Val Ala Val Glu Ala Pro Met Arg Glu Glu Tyr
            370   375   380

Ala Asp Phe Lys Pro Phe Glu Arg Val Trp Glu Val Lys Asp Ser Lys
385   390   395   400

Glu Asp Ser Asp Met Leu Ala Ala Gly Gly Lys Ile Glu Ser Asn Leu
                  405   410   415

Glu Ser Lys Val Asp Lys Lys Cys Phe Ala Asp Ser Leu Glu Gln Thr

45

Asn His Glu Lys Asp Ser Glu Ser Ser Asn Asp Asp Thr Ser Phe Pro
   435   440   445

Ser Thr Pro Glu Gly Ile Lys Asp Arg Pro Gly Ala Tyr Ile Thr Cys
   450   455   460

Ala Pro Phe Asn Pro Ala Ala Thr Glu Ser Ile Ala Thr Asn Ile Phe
465   470   475   480

Pro Leu Leu Gly Asp Pro Thr Ser Glu Asn Lys Thr Asp Glu Lys Lys
     485   490   495

Ile Glu Glu Lys Lys Ala Gln Ile Val Thr Glu Lys Asn Thr Ser Thr
    500   505   510

Lys Thr Ser Asn Pro Phe Leu Val Ala Ala Gln Asp Ser Glu Thr Asp
   515   520   525

Tyr Val Thr Thr Asp Asn Leu Thr Lys Val Thr Glu Glu Val Val Ala
   530   535   540

Asn Met Pro Glu Gly Leu Thr Pro Asp Leu Val Gln Glu Ala Cys Glu
545   550   555   560

Ser Glu Leu Asn Glu Val Thr Gly Thr Lys Ile Ala Tyr Glu Thr Lys
    565   570   575

Met Asp Leu Val Gln Thr Ser Glu Val Met Gln Glu Ser Leu Tyr Pro
   580   585   590

Ala Ala Gln Leu Cys Pro Ser Phe Glu Glu Ser Glu Ala Thr Pro Ser
   595   600   605

Pro Val Leu Pro Asp Ile Val Met Glu Ala Pro Leu Asn Ser Ala Val
   610   615   620

Pro Ser Ala Gly Ala Ser Val Ile Gln Pro Ser Ser Ser Pro Leu Glu
625   630   635   640

Ala Ser Ser Val Asn Tyr Glu Ser Ile Lys His Glu Pro Glu Asn Pro
    645   650   655

Pro Pro Tyr Glu Glu Ala Met Ser Val Ser Leu Lys Lys Val Ser Gly
            660   665   670

Ile Lys Glu Glu Ile Lys Glu Pro Glu Asn Ile Asn Ala Ala Leu Gln
        675   680   685

Glu Thr Glu Ala Pro Tyr Ile Ser Ile Ala Cys Asp Leu Ile Lys Glu
        690   695   700

Thr Lys Leu Ser Ala Glu Pro Ala Pro Asp Phe Ser Asp Tyr Ser Glu
705   710   715   720

Met Ala Lys Val Glu Gln Pro Val Pro Asp His Ser Glu Leu Val Glu
            725   730   735

Asp Ser Ser Pro Asp Ser Glu Pro Val Asp Leu Phe Ser Asp Asp Ser
            740   745   750

Ile Pro Asp Val Pro Gln Lys Gln Asp Glu Thr Val Met Leu Val Lys
            755   760   765

Glu Ser Leu Thr Glu Thr Ser Phe Glu Ser Met Ile Glu Tyr Glu Asn
        770   775   780

Lys Glu Lys Leu Ser Ala Leu Pro Pro Glu Gly Gly Lys Pro Tyr Leu
785   790   795   800

Glu Ser Phe Lys Leu Ser Leu Asp Asn Thr Lys Asp Thr Leu Leu Pro
            805   810   815

Asp Glu Val Ser Thr Leu Ser Lys Lys Glu Lys Ile Pro Leu Gln Met
            820   825   830

Glu Glu Leu Ser Thr Ala Val Tyr Ser Asn Asp Asp Leu Phe Ile Ser
        835   840   845

Lys Glu Ala Gln Ile Arg Glu Thr Glu Thr Phe Ser Asp Ser Ser Pro
        850   855   860

Ile Glu Ile Ile Asp Glu Phe Pro Thr Leu Ile Ser Ser Lys Thr Asp
865   870   875   880

Ser Phe Ser Lys Leu Ala Arg Glu Tyr Thr Asp Leu Glu Val Ser His

47

Lys Ser Glu Ile Ala Asn Ala Pro Asp Gly Ala Gly Ser Leu Pro Cys
            900   905   910

Thr Glu Leu Pro His Asp Leu Ser Leu Lys Asn Ile Gln Pro Lys Val
        915   920   925

Glu Glu Lys Ile Ser Phe Ser Asp Asp Phe Ser Lys Asn Gly Ser Ala
        930   935   940

Thr Ser Lys Val Leu Leu Leu Pro Pro Asp Val Ser Ala Leu Ala Thr
945   950   955   960

Gln Ala Glu Ile Glu Ser Ile Val Lys Pro Lys Val Leu Val Lys Glu
            965   970   975

Ala Glu Lys Lys Leu Pro Ser Asp Thr Glu Lys Glu Asp Arg Ser Pro
            980   985   990

Ser Ala Ile Phe Ser Ala Glu Leu Ser Lys Thr Ser Val Val Asp Leu
            995   1000   1005

Leu Tyr Trp Arg Asp Ile Lys Lys Thr Gly Val Val Phe Gly Ala
    1010   1015   1020

Ser Leu Phe Leu Leu Leu Ser Leu Thr Val Phe Ser Ile Val Ser
    1025   1030   1035

Val Thr Ala Tyr Ile Ala Leu Ala Leu Leu Ser Val Thr Ile Ser
    1040   1045   1050

Phe Arg Ile Tyr Lys Gly Val Ile Gln Ala Ile Gln Lys Ser Asp
    1055   1060   1065

Glu Gly His Pro Phe Arg Ala Tyr Leu Glu Ser Glu Val Ala Ile
    1070   1075   1080

Ser Glu Glu Leu Val Gln Lys Tyr Ser Asn Ser Ala Leu Gly His
    1085   1090   1095

Val Asn Cys Thr Ile Lys Glu Leu Arg Arg Leu Phe Leu Val Asp
    1100   1105   1110

48

```
Asp Leu  Val Asp Ser Leu Lys  Phe Ala Val Leu Met  Trp Val Phe
    1115                 1120                1125


Thr Tyr  Val Gly Ala Leu Phe  Asn Gly Leu Thr Leu  Leu Ile Leu
    1130                 1135                1140


Ala Leu  Ile Ser Leu Phe Ser  Val Pro Val Ile Tyr  Glu Arg His
    1145                 1150                1155


Gln Ala  Gln Ile Asp His Tyr  Leu Gly Leu Ala Asn  Lys Asn Val
    1160                 1165                1170


Lys Asp  Ala Met Ala Lys Ile  Gln Ala Lys Ile Pro  Gly Leu Lys
    1175                 1180                1185


Arg Lys  Ala Glu
    1190


<210>  24
<211>  373
<212>  PRT
<213>  Homo sapiens

<400>  24

Met Glu Asp Leu Asp Gln Ser Pro Leu Val Ser Ser Ser Asp Ser Pro
1                 5                 10                15


Pro Arg Pro Gln Pro Ala Phe Lys Tyr Gln Phe Val Arg Glu Pro Glu
             20                25                30


Asp Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Asp Glu Asp Glu Asp
        35                40                45


Leu Glu Glu Leu Glu Val Leu Glu Arg Lys Pro Ala Ala Gly Leu Ser
    50                55                60


Ala Ala Pro Val Pro Thr Ala Pro Ala Ala Gly Ala Pro Leu Met Asp
65                70                75                80


Phe Gly Asn Asp Phe Val Pro Pro Ala Pro Arg Gly Pro Leu Pro Ala
             85                90                95


Ala Pro Pro Val Ala Pro Glu Arg Gln Pro Ser Trp Asp Pro Ser Pro
             100               105               110
```

49

Val Ser Ser Thr Val Pro Ala Pro Ser Pro Leu Ser Ala Ala Ala Val
115   120   125

Ser Pro Ser Lys Leu Pro Glu Asp Asp Glu Pro Pro Ala Arg Pro Pro
130   135   140

Pro Pro Pro Pro Ala Ser Val Ser Pro Gln Ala Glu Pro Val Trp Thr
145   150   155   160

Pro Pro Ala Pro Ala Pro Ala Ala Pro Pro Ser Thr Pro Ala Ala Pro
                165   170   175

Lys Arg Arg Gly Ser Ser Gly Ser Val Val Val Asp Leu Leu Tyr Trp
            180   185   190

Arg Asp Ile Lys Lys Thr Gly Val Val Phe Gly Ala Ser Leu Phe Leu
            195   200   205

Leu Leu Ser Leu Thr Val Phe Ser Ile Val Ser Val Thr Ala Tyr Ile
        210   215   220

Ala Leu Ala Leu Leu Ser Val Thr Ile Ser Phe Arg Ile Tyr Lys Gly
                230   235   240
225

Val Ile Gln Ala Ile Gln Lys Ser Asp Glu Gly His Pro Phe Arg Ala
            245   250   255

Tyr Leu Glu Ser Glu Val Ala Ile Ser Glu Glu Leu Val Gln Lys Tyr
            260   265   270

Ser Asn Ser Ala Leu Gly His Val Asn Cys Thr Ile Lys Glu Leu Arg
            275   280   285

Arg Leu Phe Leu Val Asp Asp Leu Val Asp Ser Leu Lys Phe Ala Val
            290   295   300

Leu Met Trp Val Phe Thr Tyr Val Gly Ala Leu Phe Asn Gly Leu Thr
305   310   315   320

Leu Leu Ile Leu Ala Leu Ile Ser Leu Phe Ser Val Pro Val Ile Tyr
            325   330   335

50

Glu Arg His Gln Ala Gln Ile Asp His Tyr Leu Gly Leu Ala Asn Lys
            340   345   350

Asn Val Lys Asp Ala Met Ala Lys Ile Gln Ala Lys Ile Pro Gly Leu
            355   360   365

Lys Arg Lys Ala Glu
        370

<210> 25
<211> 199
<212> PRT
<213> Homo sapiens

<400> 25

Met Asp Gly Gln Lys Lys Asn Trp Lys Asp Lys Val Val Asp Leu Leu
1   5   10   15

Tyr Trp Arg Asp Ile Lys Lys Thr Gly Val Val Phe Gly Ala Ser Leu
            20   25   30

Phe Leu Leu Leu Ser Leu Thr Val Phe Ser Ile Val Ser Val Thr Ala
            35   40   45

Tyr Ile Ala Leu Ala Leu Leu Ser Val Thr Ile Ser Phe Arg Ile Tyr
        50   55   60

Lys Gly Val Ile Gln Ala Ile Gln Lys Ser Asp Glu Gly His Pro Phe
65   70   75   80

Arg Ala Tyr Leu Glu Ser Glu Val Ala Ile Ser Glu Glu Leu Val Gln
            85   90   95

Lys Tyr Ser Asn Ser Ala Leu Gly His Val Asn Cys Thr Ile Lys Glu
            100   105   110

Leu Arg Arg Leu Phe Leu Val Asp Asp Leu Val Asp Ser Leu Lys Phe
            115   120   125

Ala Val Leu Met Trp Val Phe Thr Tyr Val Gly Ala Leu Phe Asn Gly
        130   135   140

Leu Thr Leu Leu Ile Leu Ala Leu Ile Ser Leu Phe Ser Val Pro Val
145   150   155   160

51

```
Ile Tyr Glu Arg His Gln Ala Gln Ile Asp His Tyr Leu Gly Leu Ala
            165                 170             175


Asn Lys Asn Val Lys Asp Ala Met Ala Lys Ile Gln Ala Lys Ile Pro
            180                 185             190


Gly Leu Lys Arg Lys Ala Glu
        195


<210> 26
<211> 473
<212> PRT
<213> Homo sapiens

<400> 26

Met Lys Arg Ala Ser Ala Gly Gly Ser Arg Leu Leu Ala Trp Val Leu
1               5               10              15


Trp Leu Gln Ala Trp Gln Val Ala Ala Pro Cys Pro Gly Ala Cys Val
            20                  25              30


Cys Tyr Asn Glu Pro Lys Val Thr Thr Ser Cys Pro Gln Gln Gly Leu
        35                  40              45


Gln Ala Val Pro Val Gly Ile Pro Ala Ala Ser Gln Arg Ile Phe Leu
        50                  55              60


His Gly Asn Arg Ile Ser His Val Pro Ala Ala Ser Phe Arg Ala Cys
65              70                  75              80


Arg Asn Leu Thr Ile Leu Trp Leu His Ser Asn Val Leu Ala Arg Ile
            85                  90              95


Asp Ala Ala Ala Phe Thr Gly Leu Ala Leu Leu Glu Gln Leu Asp Leu
            100                 105             110


Ser Asp Asn Ala Gln Leu Arg Ser Val Asp Pro Ala Thr Phe His Gly
            115                 120             125


Leu Gly Arg Leu His Thr Leu His Leu Asp Arg Cys Gly Leu Gln Glu
        130                 135                 140


Leu Gly Pro Gly Leu Phe Arg Gly Leu Ala Ala Leu Gln Tyr Leu Tyr
145                 150                 155             160
```

52

Leu Gln Asp Asn Ala Leu Gln Ala Leu Pro Asp Asp Thr Phe Arg Asp
                165   170   175

Leu Gly Asn Leu Thr His Leu Phe Leu His Gly Asn Arg Ile Ser Ser
                180   185   190

Val Pro Glu Arg Ala Phe Arg Gly Leu His Ser Leu Asp Arg Leu Leu
                195   200   205

Leu His Gln Asn Arg Val Ala His Val His Pro His Ala Phe Arg Asp
        210   215   220

Leu Gly Arg Leu Met Thr Leu Tyr Leu Phe Ala Asn Asn Leu Ser Ala
225   230   235   240

Leu Pro Thr Glu Ala Leu Ala Pro Leu Arg Ala Leu Gln Tyr Leu Arg
                245   250   255

Leu Asn Asp Asn Pro Trp Val Cys Asp Cys Arg Ala Arg Pro Leu Trp
                260   265   270

Ala Trp Leu Gln Lys Phe Arg Gly Ser Ser Ser Glu Val Pro Cys Ser
                275   280   285

Leu Pro Gln Arg Leu Ala Gly Arg Asp Leu Lys Arg Leu Ala Ala Asn
        290   295   300

Asp Leu Gln Gly Cys Ala Val Ala Thr Gly Pro Tyr His Pro Ile Trp
305   310   315   320

Thr Gly Arg Ala Thr Asp Glu Glu Pro Leu Gly Leu Pro Lys Cys Cys
                325   330   335

Gln Pro Asp Ala Ala Asp Lys Ala Ser Val Leu Glu Pro Gly Arg Pro
                340   345   350

Ala Ser Ala Gly Asn Ala Leu Lys Gly Arg Val Pro Pro Gly Asp Ser
                355   360   365

Pro Pro Gly Asn Gly Ser Gly Pro Arg His Ile Asn Asp Ser Pro Phe
        370   375   380

53

Gly Thr Leu Pro Gly Ser Ala Glu Pro Pro Leu Thr Ala Val Arg Pro
385   390   395   400

Glu Gly Ser Glu Pro Pro Gly Phe Pro Thr Ser Gly Pro Arg Arg Arg
                405   410   415

Pro Gly Cys Ser Arg Lys Asn Arg Thr Arg Ser His Cys Arg Leu Gly
                420   425   430

Gln Ala Gly Ser Gly Gly Gly Gly Thr Gly Asp Ser Glu Gly Ser Gly
            435   440   445

Ala Leu Pro Ser Leu Thr Cys Ser Leu Thr Pro Leu Gly Leu Ala Leu
    450   455   460

Val Leu Trp Thr Val Leu Gly Pro Cys
465   470

<210> 27
<211> 473
<212> PRT
<213> Mus musculus

<400> 27

Met Lys Arg Ala Ser Ser Gly Gly Ser Arg Leu Leu Ala Trp Val Leu
1   5   10   15

Trp Leu Gln Ala Trp Arg Val Ala Thr Pro Cys Pro Gly Ala Cys Val
            20   25   30

Cys Tyr Asn Glu Pro Lys Val Thr Thr Ser Cys Pro Gln Gln Gly Leu
            35   40   45

Gln Ala Val Pro Thr Gly Ile Pro Ala Ser Ser Gln Arg Ile Phe Leu
    50   55   60

His Gly Asn Arg Ile Ser His Val Pro Ala Ala Ser Phe Gln Ser Cys
65   70   75   80

Arg Asn Leu Thr Ile Leu Trp Leu His Ser Asn Ala Leu Ala Arg Ile
                85   90   95

Asp Ala Ala Ala Phe Thr Gly Leu Thr Leu Leu Glu Gln Leu Asp Leu
            100   105   110

Ser Asp Asn Ala Gln Leu His Val Val Asp Pro Thr Thr Phe His Gly
     115   120   125

Leu Gly His Leu His Thr Leu His Leu Asp Arg Cys Gly Leu Arg Glu
     130   135   140

Leu Gly Pro Gly Leu Phe Arg Gly Leu Ala Ala Leu Gln Tyr Leu Tyr
145   150   155   160

Leu Gln Asp Asn Asn Leu Gln Ala Leu Pro Asp Asn Thr Phe Arg Asp
          165   170   175

Leu Gly Asn Leu Thr His Leu Phe Leu His Gly Asn Arg Ile Pro Ser
          180   185   190

Val Pro Glu His Ala Phe Arg Gly Leu His Ser Leu Asp Arg Leu Leu
          195   200   205

Leu His Gln Asn His Val Ala Arg Val His Pro His Ala Phe Arg Asp
     210   215   220

Leu Gly Arg Leu Met Thr Leu Tyr Leu Phe Ala Asn Asn Leu Ser Met
225   230   235   240

Leu Pro Ala Glu Val Leu Met Pro Leu Arg Ser Leu Gln Tyr Leu Arg
          245   250   255

Leu Asn Asp Asn Pro Trp Val Cys Asp Cys Arg Ala Arg Pro Leu Trp
          260   265   270

Ala Trp Leu Gln Lys Phe Arg Gly Ser Ser Ser Glu Val Pro Cys Asn
          275   280   285

Leu Pro Gln Arg Leu Ala Asp Arg Asp Leu Lys Arg Leu Ala Ala Ser
          290   295   300

Asp Leu Glu Gly Cys Ala Val Ala Ser Gly Pro Phe Arg Pro Ile Gln
305   310   315   320

Thr Ser Gln Leu Thr Asp Glu Glu Leu Leu Ser Leu Pro Lys Cys Cys
          325   330   335

Gln Pro Asp Ala Ala Asp Lys Ala Ser Val Leu Glu Pro Gly Arg Pro

```
Ala Ser Ala Gly Asn Ala Leu Lys Gly Arg Val Pro Pro Gly Asp Thr
        355                 360                 365

Pro Pro Gly Asn Gly Ser Gly Pro Arg His Ile Asn Asp Ser Pro Phe
        370                 375                 380

Gly Thr Leu Pro Ser Ser Ala Glu Pro Pro Leu Thr Ala Leu Arg Pro
385                      390                 395                 400

Gly Gly Ser Glu Pro Pro Gly Leu Pro Thr Thr Gly Pro Arg Arg Arg
                405             410             415

Pro Gly Cys Ser Arg Lys Asn Arg Thr Arg Ser His Cys Arg Leu Gly
            420                 425                 430

Gln Ala Gly Ser Gly Ala Ser Gly Thr Gly Asp Ala Glu Gly Ser Gly
            435             440             445

Ala Leu Pro Ala Leu Ala Cys Ser Leu Ala Pro Leu Gly Leu Ala Leu
    450             455             460

Val Leu Trp Thr Val Leu Gly Pro Cys
465             470
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<210> 23
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 28

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Ser Gly Val Pro Ser Asn Leu Pro Gln Arg Leu Ala Gly Arg Asp
1               5               10              15
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<210> 29
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 29

Thr Arg Ser His Cys Arg Leu Gly Gln Ala Gly Ser Gly Ser Ser
1   5   10   15